

CHAPTER V

ALTERNATIVES

A. INTRODUCTION

CEQA requires an evaluation of the comparative effects of “a reasonable range of potentially feasible alternatives” to the project. Alternatives to be considered are those that “would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project” (*CEQA Guidelines* Section 15126.6(a)). The range of alternatives is governed by the “rule of reason” that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice (Section 15126.6(f)). Evaluation of a No Project Alternative, and identification of an environmentally superior alternative are required. The significant effects of the alternatives shall be discussed, but in less detail than the significant effects of the proposed project (Section 15126.6(d)).

Although the Building 49 project would not result in any impacts that could not be mitigated to a less-than-significant level, this chapter nevertheless discusses in detail the following alternatives to the proposed project, to foster informed decision-making and public participation: 1) No Project Alternative; 2) Off-Site Soil Disposal—Grizzly Peak Route; 3) Building 49 Alternative Site—Building 90 Trailer Complex site; 4) Building 49 Reduced Size—Reduced Footprint; and 5) Building 49 Reduced Size—Reduced Height. The components of these alternatives are described below, including a discussion of their impacts and how they would differ from those under the proposed project.

The *CEQA Guidelines* require that an EIR briefly describe the rationale for selecting the alternatives to be discussed (Section 15126.6(a)), and suggest that an EIR also identify any alternatives that were considered by the lead agency but were rejected as infeasible (Section 15126.6(c)). This chapter of the EIR also addresses these issues. Several additional alternatives that were considered and then dismissed from further evaluation are discussed briefly below, prior to the main body of this chapter.

Of the alternatives assessed in this EIR, the alternative with the least environmental impact is the No Project Alternative. Section 15126.6(e)(2) of the *CEQA Guidelines* states that if the environmentally superior alternative is the no project alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives. Among the other alternatives, the Building 49 Alternative Site—Building 90 Complex Trailer Site Alternative is determined to be the environmentally superior alternative, because it would occur on a relatively flat, mostly paved site. This would minimize excavation, grading, and slope stabilization and would add little impervious area to the LBNL site. It should be noted, as stated above, that all impacts of the

project are determined to be less than significant with improvements proposed as part of the project and mitigation identified in this EIR.

The alternatives addressed in this EIR were selected in consideration of one or more of the following factors:

- the extent to which the alternative would accomplish most of the basic objectives of the project (see “Project Sponsor’s Objectives” in Chapter III);
- the extent to which the alternative would avoid or lessen any of the identified significant adverse environmental effects of the project;
- the feasibility of the alternative, taking into account site suitability, economic viability, availability of infrastructure, consistency with regulatory limitations, and the reasonability of the project sponsor’s acquiring or controlling the site;
- the appropriateness of the alternative in contributing to a “reasonable range” of alternatives necessary to permit a reasoned choice;
- the requirement of *CEQA Guidelines* to consider a “no project” alternative as well as an “environmentally superior” alternative (*CEQA Guidelines*, Section 15126.6); and
- in response to alternatives requested or identified during the public scoping process.

B. ALTERNATIVES CONSIDERED AND REJECTED

PROJECT BUILDING SITE ALTERNATIVES

OTHER LBNL ON-SITE BUILDING LOCATIONS

LBNL considered several potential building locations within LBNL’s management area in addition to the current project site. For this EIR analysis, alternatives are considered that would minimize the generation of excess excavated materials that must be removed from the site (see Figure V-1). In general, this means that the optimal site would be relatively flat and developable. Ideally, it would be currently paved to avoid a net increase in impermeable surface area. Three such sites were identified through the planning and public scoping processes: the Building 88 site, the Building 51 Complex site, and the Building 90 Complex Trailers site, the last of which is discussed in detail later in this section.

Building 88 Site

Under this alternative, Building 49 would be constructed in the westernmost area of Berkeley Lab, where Building 88 currently located. This action would require the relocation of the 170 occupants of that building, followed by any necessary decontamination of old accelerator facilities, demolition and removal of the building and its equipment, and site preparation. Because it is currently a flat and paved area, it would result in no increase in impermeable surface area and would require relatively few truck trips for disposal of excavated materials and demolition debris.

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LBNL-SUPPLIED FIGURE

This alternative would not be practical within the time frame of the proposed project, which is to begin construction in the Spring of 2004 in order to begin alleviating space shortages by 2005. Building 88 continues to house an active, large-scale particle accelerator and many accelerator-related scientific research programs. This alternative would require discontinuation of the accelerator and relocation and accommodation of those programs along with the 170 occupants of the building. DOE funding and permission would have to be secured to decommission and dismantle the building and equipment. The building would need to be assayed for contamination and, if necessary, decontaminated. The building would then need to be dismantled and hauled off-site for disposal. This process would take several years. Furthermore, Building 88 is situated on a DOE-leased parcel, which would likely preclude construction and ownership of the building by a third-party developer. In addition, it would underuse an area that may be redevelopable with a more appropriately sized or functioning building in the future. Finally, although it would reduce impacts associated with hauling excavated soil under the project, it would not “avoid or substantially lessen any of the significant effects of the project.”

Building 51 Site

Under this alternative, Building 49 would be constructed in the central-western area of Berkeley Lab, where the Building 51 complex is currently located. This action would require the relocation of the approximately 60 occupants of the complex, followed by any necessary decontamination of old accelerator facilities, demolition and removal of the buildings and equipment, and site preparation. Because it is currently a flat and paved area, it would result in no increase in impermeable surface area and would require relatively few truck trips for disposal of excavated materials. However, approximately 1,000 truckloads of shielding blocks, demolition debris, and other materials would need to be removed from the site. Additional truckloads of clean backfill material may be needed to replace any soil removed from the complex for cleanup purposes.

As with the Building 88 site alternative, above, this alternative would require employee relocation, decontamination, deconstruction, and site clearing, all of which would take several years and extensive funding that is not readily available. Furthermore, Building 51 is situated on a DOE-leased parcel, which would likely preclude construction and ownership of the building by a third-party developer. In addition, it would underuse an area that may be redevelopable with a larger or more appropriate building in the future. Finally, although it would reduce impacts associated with hauling excavated soil under the project, it would not “avoid or substantially lessen any of the significant effects of the project. Consequently, this alternative does not meet the need for this project to address immediate space problems at Berkeley Lab.

OFF-SITE LOCATIONS

Under this alternative, Building 49 office functions would be located in leased space in a building or multiple buildings off-site. The off-site leased space would be located in the City of Berkeley or in nearby cities such as Oakland or Emeryville. Up to approximately 240 current LBNL employees would commute to these alternate locations. If nearby parking is not readily available, LBNL may provide parking by having those workers park at the Lab site and take shuttles or by

renting out parking facilities near the leased space. The leased space would need to be near public transportation, conveniently close to Berkeley Lab and Lab off-site shuttle routes, of acceptable quality, and available at acceptable market rates.

This alternative would not meet the needs and objectives of the proposed project. It would cause additional traffic trips between the Lab and the off-site leased space and decrease efficiency. This would substantially drive up indirect project costs over the lifetime of the project. It would divide and segment Lab staff and reduce the opportunities and synergistic interaction that is a key component of LBNL's success as a research institution. It would contradict stated objectives of this project, including "(the project would) minimize inefficiencies of staff being segmented from the main Berkeley Laboratory; it would reduce time, money, and environmental impacts of frequent travel between off-site leased space and the main site in the everyday conduct of LBNL business; and help achieve the LBNL objective of consolidating Laboratory staff and functions on site wherever practical."

SOIL DISPOSAL ALTERNATIVES

G-4 PARKING LOT

The G-4 parking lot would be constructed on fill on slopes south of the building 50 and 70 complexes. It would range from a minimum of 31,000 square feet and 95 parking stalls up to a maximum of 39,000 square feet and 120 parking stalls. The minimum size would use about 26,000 cubic yards of fill—the amount to be generated from the Building 49 project excavation. The maximum parking lot size, which would be built as an optional second phase, would only be constructed if additional soil were to become available in the future. The G-4 parking lot would serve the approximately 1,235 current occupants of the Building 50 and Building 70 complexes, which currently are served by fewer than 250 parking spaces dedicated to those buildings.

Construction of the G-4 parking lot would require the alteration of a small drainage (approximately 0.03 acres) that runs through the project site so that the site may receive fill. In order to do this, it is anticipated that the proposed alternative would require a Clean Water Act Section 404 Nationwide permit from the US Army Corps of Engineers, a Clean Water Act section 401 water quality certification from the San Francisco Regional Water Quality Control Board, and a streambed alteration agreement from the California Department of Fish and Game. In addition, it would require the removal of several trees and other vegetation, including coast live oak trees and some riparian plant species, from the lower elevations of the project site.

The G-4 Parking Lot would be located at the southeasterly terminus of East Road, about 700 feet southeast of the Building 49 site. It is anticipated that the G-4 Parking Lot would be used by, among others, employees at the new Building 49, the existing Building 70 complex, and the existing Building 50 complex that is between Building 70A and the Building 49 site.

This alternative would generate several significant impacts to biological, water, and aesthetic resources. After consideration of public comments received during the initial scoping period and review of information provided by environmental consultants, LBNL determined that this

alternative would not be considered as an option for disposal of excavated soil from the Building 49 project.

BLACKBERRY CANYON PARKING LOT

Under this alternative, 26,000 cubic yards of soil excavated from the Building 49 project would be combined with approximately 34,000 cubic yards of additional soil from other as yet unidentified sources to increase the size of the Blackberry Canyon parking lot in the western area of Berkeley Lab. The fill would be used to increase the elevation of the fill footprint and the surface of the fill plateau area from approximately 37,000 sq. ft. to 67,000 sq. ft. The elevation of the plateau would rise about 30 feet from its current 630-foot elevation to an approximately 660-foot elevation. The “toe” of the grading footprint would need to be extended up to 100 feet westward, and would require extension of the 48-inch culvert carrying the north fork of Strawberry Creek, which currently travels under Blackberry Canyon parking lot. In addition, several dozen trees would need to be removed, including mature oaks.

This alternative is rejected from further consideration because it would create many of the same impacts as those identified during scoping for the G-4 Parking Lot in the canyon area south of Building 70A. Many trees would be removed, visual and biological resources would be adversely affected, and an up to 100-foot stretch of open “waters of the United States” would be enclosed in pipe and covered. In addition, parking for approximately 120 automobiles would be displaced during the several-month expansion of this lot, and it is not apparent where this parking could be accommodated in the meantime.

C. NO PROJECT ALTERNATIVE

DESCRIPTION

Under this alternative, Building 49 would not be constructed. Conditions on the project site would remain as they are at present, at least for the short term. This alternative would not preclude future development of the site, which is identified in the LBNL LRDP as a potential future building site.

IMPACT ANALYSIS

This alternative would not result in any of the project’s impacts, as described in Chapter IV of this EIR. Conditions on the project sites would remain unchanged for the foreseeable future, and Berkeley Lab would continue to operate at current levels of overcrowding in existing buildings. Because these staff would continue to work in older buildings, they would not realize the benefit of working in a newly constructed facility that adheres to the latest seismic and fire standards.

D. OFF-SITE SOIL DISPOSAL—GRIZZLY PEAK ROUTE

DESCRIPTION

Under this alternative, excavated soil from Building 49 construction would be transported off-site for disposal via trucks using Strawberry Gate to Grizzly Peak Boulevard, to Fish Ranch Road to State Route 24. As with the project, approximately 2,170 total truck loads would be needed to transport the approximately 26,000 cubic yards of soil to landfills or other destinations. This soil hauling would be spread over the three-month period when site excavation is scheduled to occur.

IMPACT ANALYSIS

AESTHETICS

Besides impacts associated with the building itself, this alternative would result in no new impacts besides the temporary appearance of single (spaced apart) construction trucks along Grizzly Peak Road. With inclusion of appropriate LRDP EIR and project-specific mitigation, they would be less than significant.

AIR QUALITY

Air Quality impacts under this alternative would be essentially the same as those of the proposed project, and, with inclusion of appropriate LRDP EIR and project-specific mitigation, they would be less than significant.

BIOLOGICAL RESOURCES

Under this alternative, the 26,000 cubic yards of excavated soils would be hauled to an off-site landfill or construction site. There would be no new impacts to biological resources resulting from this alternative. With inclusion of appropriate LRDP EIR and project-specific mitigation, impacts associated with this alternative would be less than significant.

CULTURAL RESOURCES

Cultural resources impacts under this alternative would be essentially the same as those of the proposed project, and, with inclusion of appropriate LRDP EIR and project-specific mitigation, they would be less than significant.

GEOLOGY AND SOILS

Geology and soils impacts under this alternative would be the same as those of the proposed project, and, with inclusion of appropriate LRDP EIR and project-specific mitigation, they would be less than significant.

HAZARDS AND HAZARDOUS MATERIALS

Hazards and hazardous materials impacts under this alternative would be essentially the same as those of the proposed project, and, with inclusion of appropriate LRDP EIR and project-specific mitigation, they would be less than significant.

HYDROLOGY AND WATER QUALITY

Hydrology and water quality impacts under this alternative would be essentially the same as those of the proposed project, and, with inclusion of appropriate LRDP EIR and project-specific mitigation, they would be less than significant.

LAND USE AND PLANNING

Land use and planning impacts under this alternative would be essentially the same as those of the proposed project, and, with inclusion of appropriate LRDP EIR and project-specific mitigation, they would be less than significant.

NOISE

There are no residences or particularly sensitive noise receptors along this route. The Lawrence Hall of Science is in a building insulated from normal traffic noise. Noise impacts under this alternative would be essentially the same as those of the proposed project, and, with inclusion of appropriate LRDP EIR and project-specific mitigation, they would be less than significant.

PUBLIC SERVICES

Public services impacts under this alternative would be essentially the same as those of the proposed project, and, with inclusion of appropriate LRDP EIR and project-specific mitigation, they would be less than significant.

TRANSPORTATION/TRAFFIC

Under this alternative, the 26,000 cubic yards of excavated soils would be hauled to an off-site landfill via Cyclotron Road and Lawrence Road to Centennial Drive (via Strawberry Gate), to Grizzly Peak Boulevard, to Fish Ranch Road to State Route 24. The destination(s) of the material (i.e., Hayward or Martinez, or both) would dictate in which direction trucks would then travel on State Route 24. On the basis of the same average haul truck capacity (about 12 cubic yards per truck) as for the project, there would be about 2,170 total truck loads (i.e., about 4,340 one-way truck trips) spread over the three-month period when site excavation occurred. If those truck trips were made during the seven-hour period between 9:00 a.m. and 4:00 p.m. (to avoid the commute traffic hours), 33 trucks per day would generate 66 daily one-way trips, with average of nine one-way trips per hour (i.e., one truck every 6.5 minutes).

Construction-generated traffic would be temporary and therefore would not result in long-term degradation in operating conditions on project roadways. The estimated increase in traffic volumes caused by project-generated haul truck traffic on the above-described haul route would not be substantial, and would not significantly disrupt daily traffic flow on these roadways. The primary impacts from construction truck traffic would include a temporary and intermittent reduction of roadway capacities due to the slower movements (accentuated by the uphill alignment of the roads on which the full trucks would have to travel) compared to passenger vehicles. However, the estimated number of construction-generated vehicle trips (i.e., a maximum of one truck every 6.5 minutes between 9:00 a.m. and 4:00 p.m.) would not cause significant traffic delays.

If project truck traffic were to occur during the hours of 7:00 to 9:00 a.m. and 4:00 to 6:00 p.m., the added volume would coincide with peak-hour traffic and could impede traffic flow. The LBNL-proposed measure restricting truck traffic during the a.m. and p.m. peak periods would minimize disruption of the general traffic flow on affected roadways during those times.

This alternative could create some delays and present traffic hazards to drivers, bicyclists, and pedestrians who use the steep Centennial Drive and Grizzly Peak roads, and to users of the Lawrence Hall of Science, particularly where the trucks would turn left onto uphill traffic across from the Strawberry Gate. Contractors would implement standard Best Management Practices in order to mitigate any short-term construction-related transportation impacts. Generally, these practices include implementation of a traffic control plan, such as measures (e.g., advance warning signs, flaggers to direct traffic, and advance notification of interested parties about the location, timing, and duration of construction activity) to maintain safe and efficient traffic flow during the construction period. The effect on traffic conditions would be less than significant.

UTILITIES, SERVICE SYSTEMS, AND ENERGY

Utilities, service systems, and energy impacts under this alternative would be essentially the same as those of the proposed project, and, with inclusion of appropriate LRDP EIR and project-specific mitigation, they would be less than significant.

E. BUILDING 49 – BUILDING 90 COMPLEX TRAILER SITE

DESCRIPTION

Under this alternative, Building 49 would be constructed in the northwest area of Berkeley Lab, adjacent to Building 90 where the Building 90 complex trailer site is currently located. This action would require the relocation of the 75 occupants of those trailers, followed by removal of the trailers, and site preparation. It would also reduce the size of the accompanying Building 90 complex parking lot by approximately 50 spaces. Because it is currently a generally flat and paved area, it would result in little increase in impermeable surface area and would require approximately 900 truck trips for disposal of approximately 10,000 cubic yards of excavated materials and demolition debris. This excavation is due to the need to provide for foundation and

basement-level area required by the building. Several small patches of landscaped areas account for the impermeable area that would be lost, along with up to 12 pine trees and 6 Australian willow trees. At up to six stories, this building would be visible intermittently from off-site viewpoints.

This alternative would not be practical within the time frame of the proposed project, which is to begin construction in the Spring of 2004 in order to begin alleviating space shortages by 2005. It would require accommodations for the Building 90 Trailer complex's 75 occupants in addition to 50 parking spaces that currently serve the complex prior to site preparation. The Building 90 Complex is situated on a parcel leased by the Department of Energy, which may preclude construction and ownership of the building by a third-party developer. In addition, it would underuse an area that may be redevelopable with a more appropriately sized or functioning building in the future. It would not meet the project's objectives to establish a "signature building that serves as a focal point for visitors." Finally, although it would reduce impacts associated with hauling excavated soil under the project, it would not "avoid or substantially lessen any of the significant effects of the project." Nevertheless, because it is more feasible than the other building alternatives identified and rejected in this section, the Building 90 complex trailer site is brought forward for analysis for the purposes of this EIR.

IMPACT ANALYSIS

AESTHETICS

The Building 90 Complex trailer site is generally shielded from off-site views by screening trees, terrain, and Building 90 itself. Nevertheless, it is likely that the upper floors of Building 49 under this alternative would be intermittently visible from off-site viewpoints in the City of Berkeley. Such views of this building would be somewhat more noticeable than building views under the proposed project, particularly since Building 90 would not serve as a prominent backdrop for the building in the same way that the Building 50 complex would. Nevertheless, such aesthetics impacts would be similar to those of the proposed project, and, with inclusion of appropriate LRDP EIR and project-specific mitigation, they would be less than significant.

AIR QUALITY

Under this alternative, temporary and minor air emissions associated with excavation and the transport and removal of excavated soil would be greatly reduced. Other emissions, including those associated with construction of the building, transportation of construction equipment and supplies, and operation of the building, would be the same as those of the proposed project. With inclusion of appropriate LRDP EIR and project-specific mitigation, these impacts would be less than significant.

BIOLOGICAL RESOURCES

Because the Building 90 Complex trailer site is generally covered or otherwise developed, there would be no impact to biological resources except for the removal of up to 12 pine trees and 6 Australian willow trees used for landscaping. Biological impacts would be less than significant.

CULTURAL RESOURCES

There are no known or suspected historical or archaeological resources present on the Building 90 complex trailer site. Cultural resources impacts under this alternative would be essentially the same as those of the proposed project, and, with inclusion of appropriate LRDP EIR and project-specific mitigation, they would be less than significant.

GEOLOGY AND SOILS

Under this alternative, Building 49 would be constructed on a relatively flat site that would not require the extent of excavation and stabilization as would the proposed project, which is located on a sloped site. Excavation and removal of excavated soils would be necessary to construct a foundation and basement for the building. Because the alternative site is relatively flat, slope and sliding related hazards would be less of a concern than with the proposed project. Geology and soils impacts under this alternative would be less than significant.

HAZARDS AND HAZARDOUS MATERIALS

As with the proposed project site, there are no known or suspected contaminated soils or contamination groundwater plumes on the Building 90 Complex trailer site. Hazards and hazardous materials impacts under this alternative would be essentially the same as those of the proposed project, and, with inclusion of appropriate LRDP EIR and project-specific mitigation, they would be less than significant.

HYDROLOGY AND WATER QUALITY

Because the alternative site is currently mostly paved, very little new impervious surface would be added to this site, compared to that with the proposed project. Hydrology and water quality impacts under this alternative would be less than significant.

LAND USE AND PLANNING

Because the Building 90 Complex trailer site is currently developed, construction of Building 49 there would be generally consistent with the Berkeley Lab 1987 LRDP. However, it would pose several logistical land use and planning problems: the Building 90 complex trailer site is leased by the Department of Energy and could not be readily used by a third-party developer/building owner; it would require permanent removal of 50 parking spaces and immediate relocation of 75 current staff when such surge space for employees and parking is not readily available; it would locate a relatively large building in close proximity to a similarly large building without regard to

adequate buffer space between the buildings and consideration of adequate parking, emergency access, and fire truck turn-around space; as a six-story building, Building 49 would block natural light and open views for which Building 90 was designed; and, it would preclude future uses of the site which might be more appropriate, including a possible support building for LBNL's Energy and Environmental Technology Division (EETD), which is largely located in Building 90. Land use and planning impacts under this alternative would be essentially the same as those of the proposed project, and, with inclusion of appropriate LRDP EIR and project-specific mitigation, they would be less than significant.

NOISE

Under this alternative, the proposed building construction would take place at a distance closer to the nearest off-site residential receptors than would the proposed project at the proposed project site. Construction noise would be somewhat decreased in duration due to the reduction in excavation and the elimination of off-site soil hauling needed to construct the project at this location. Noise impacts under this alternative would be similar to but of lesser duration than those of the proposed project, and, with inclusion of appropriate LRDP EIR and project-specific mitigation, they would be less than significant.

PUBLIC SERVICES

Public services impacts under this alternative would be essentially the same as those of the proposed project, and, with inclusion of appropriate LRDP EIR and project-specific mitigation, they would be less than significant.

TRANSPORTATION/TRAFFIC

Construction under this alternative would require approximately 833 round truck trips to haul soil off-site. This would reduce an already less-than-significant traffic impact posed by the proposed project. Because the type and size of development with this alternative would be identical to the proposed project, operational trip generation characteristics of this alternative would be the same as the proposed project (i.e., no net new vehicle trips). As such, impacts on local roadways and at study intersections associated with operation of this alternative would be the same (i.e., less than significant) as with the proposed project.

UTILITIES, SERVICE SYSTEMS, AND ENERGY

Utility, service system, and energy impacts under this alternative would be essentially the same as those of the proposed project, and, with inclusion of appropriate LRDP EIR and project-specific mitigation, they would be less than significant.

F. BUILDING 49 REDUCED SIZE – SAME PROJECT SITE

SMALLER BUILDING—REDUCED FOOTPRINT

Under this alternative, the proposed 15,000 sq. ft. footprint of the building would be reduced to approximately 12,000 sq. ft. by reducing the length of the building by approximately 50 feet. This would reduce the increase in new impermeable area by about 20 percent, and might allow for a few trees to be spared from removal. It would also reduce the amount of soil to be excavated by about 5,200 cubic yards or approximately 440 truckloads, for a total of about 1,730 round truck trips (resulting in a decrease in hauling time of about one to two weeks compared to the project), and would slightly decrease materials and utilities required to construct and operate the building. With this change in size, the building would contain approximately 52,000 gsf and would be able to accommodate about 190 occupants. In contrast to the proposed project, this reduction in building mass would slightly diminish the visibility of the building from off-site locations, would slightly decrease utility demands, and would marginally reduce materials and utilities required to construct and operate the building.

The reduced footprint alternative is not feasible because, while it would provide “decompression” space to alleviate some overcrowding in existing LBNL facilities, it would not maximize the amount of such additional office space on the proposed building site, and thus would be a less cost-efficient and space-efficient. It would be less likely that this alternative would be comparable to off-site leased office space over the life of the project. Furthermore, because the proposed project would not result in any significant, unavoidable impacts, this alternative would not meet the primary purpose of alternatives under CEQA, to “avoid or substantially lessen any of the significant effects of the project.” Nevertheless, for the purposes of this EIR, this alternative is carried forward for analysis in comparison with the proposed project.

SMALLER BUILDING—REDUCED HEIGHT

Under this alternative, the proposed six-story, approximately 85-foot height of the building would be reduced to five floors and approximately 70 feet in height, including partial first and fifth floors and complete second-through-fourth floors. This would reduce the building area by about 20 percent to approximately 52,000 gsf and would accommodate about 190 occupants. It would not decrease the impermeable area created by the project nor spare the removal of any of the site’s trees. In contrast to the proposed project, the proposed reduction in height would reduce the visibility of the building from off-site locations, would slightly decrease utility demands, and would marginally reduce materials and utilities required to construct and operate the building.

The reduced building height alternative is not feasible because, while it would provide “decompression” space to alleviate some overcrowding in existing LBNL facilities, it would not maximize the amount of such additional office space on the proposed building site, and thus would be a less cost-efficient and space-efficient. It would be less likely that this alternative would be comparable to off-site leased office space over the life of the project. Furthermore, because the proposed project would not result in any significant, unavoidable impacts, this

alternative would not meet the primary purpose of alternatives under CEQA, to “avoid or substantially lessen any of the significant effects of the project.” Nevertheless, for the purposes of this EIR, this alternative is carried forward for comparative analysis with the proposed project.

IMPACT ANALYSIS

AESTHETICS

Under the reduced footprint alternative, as compared with the proposed project, the upper floors of the building would continue to be visible from a number of off-site viewpoints, although the profile would be marginally reduced. As this would be seen against the backdrop of the relatively massive Building 50 complex, this impact would continue to be less than significant with inclusion of appropriate LRDP EIR and project-specific mitigation.

Under the reduced height alternative, the upper portion of the building would be substantially less visible from off-site viewpoints than under the proposed project. Nevertheless, it would be visible from some off-site viewpoints. As this would be seen against the backdrop of the relatively massive Building 50 complex, this impact would continue to be less than significant with inclusion of appropriate LRDP EIR and project-specific mitigation.

AIR QUALITY

Under the reduced footprint alternative, approximately 20 percent less soil would be excavated from the site than would be under the proposed project. It would also require approximately 20 percent less overall construction effort. Therefore, air emissions related to excavation, off-site soil transport, and construction would be similar to but reduced from those of the proposed project. With inclusion of appropriate LRDP EIR and project-specific mitigation, these impacts would be less than significant.

Under the reduced height alternative, because the overall building would be approximately 20 percent smaller than the proposed project, somewhat less construction effort would be required. Therefore, air emissions related to construction would be similar to but reduced from those of the proposed project, although not reduced as much as the reduced footprint alternative. With inclusion of appropriate LRDP EIR and project-specific mitigation, these impacts would be less than significant.

BIOLOGICAL RESOURCES

Under the reduced footprint alternative, biological impacts would slightly reduced as compared with the proposed project, as a small number of trees (approximately 2-4 trees) on the site might be spared. With inclusion of appropriate LRDP EIR and project-specific mitigation, these impacts would be less than significant.

Under the reduced height alternative, biological impacts would be the same as those of the proposed project. With inclusion of appropriate LRDP EIR and project-specific mitigation, these impacts would be less than significant.

CULTURAL RESOURCES

Under the reduced footprint alternative, cultural resources impacts would slightly reduced as compared with the proposed project, as there would be about 20 percent less soil disturbance and thus a reduction in the very small chance that unexpected archaeological resources may be disturbed. With inclusion of appropriate LRDP EIR and project-specific mitigation, these impacts would be less than significant.

Under the reduced height alternative, cultural resources impacts would be the same as those of the proposed project. With inclusion of appropriate LRDP EIR and project-specific mitigation, these impacts would be less than significant.

GEOLOGY AND SOILS

Under the reduced footprint alternative, geology and soils impacts would be slightly reduced as compared with the proposed project, as there would be about 20 percent less soil disturbance and thus a reduction in the amount of slope that would be modified and stabilized. With inclusion of appropriate LRDP EIR and project-specific mitigation, these impacts would be less than significant.

Under the reduced height alternative, geology and soils impacts would be essentially the same as those of the proposed project. With inclusion of appropriate LRDP EIR and project-specific mitigation, these impacts would be less than significant.

HAZARDS AND HAZARDOUS MATERIALS

Under the reduced footprint alternative, hazards and hazardous materials impacts would be the same as those of the proposed project. With inclusion of appropriate LRDP EIR and project-specific mitigation, these impacts would be less than significant.

Under the reduced height alternative, hazards and hazardous materials impacts would be the same as those of the proposed project. With inclusion of appropriate LRDP EIR and project-specific mitigation, these impacts would be less than significant.

HYDROLOGY AND WATER QUALITY

Under the reduced footprint alternative, hydrology and water quality impacts would slightly reduced as compared with the proposed project, as there would be about 20 percent less impervious surface added to the site. With inclusion of appropriate LRDP EIR and project-specific mitigation, these impacts would be less than significant.

Under the reduced height alternative, hydrology and water quality impacts would be the same as those of the proposed project. With inclusion of appropriate LRDP EIR and project-specific mitigation, these impacts would be less than significant.

LAND USE AND PLANNING

Under the reduced footprint alternative, land use and planning impacts would be essentially the same as those expected under the proposed project. With inclusion of appropriate LRDP EIR and project-specific mitigation, these impacts would be less than significant.

Under the reduced height alternative, land use and planning impacts would be similar to those of the proposed project. With inclusion of appropriate LRDP EIR and project-specific mitigation, these impacts would be less than significant.

NOISE

Under the reduced footprint alternative, noise impacts would be similar to those expected under the proposed project. Because the building would be approximately 20 percent smaller, the duration of construction-generated noise would be reduced by up to a few weeks. With inclusion of appropriate LRDP EIR and project-specific mitigation, these impacts would be less than significant.

Under the reduced height alternative, noise impacts would be similar to those of the proposed project. Because the building would be approximately 20 percent smaller, the duration of construction-generated noise would be reduced by up to a few weeks. With inclusion of appropriate LRDP EIR and project-specific mitigation, these impacts would be less than significant.

PUBLIC SERVICES

Under the reduced footprint alternative, public services impacts would be essentially the same as those expected under the proposed project. These include impacts on fire, police, and emergency services providers. Although there would be about 50 fewer people in the building than under the proposed project, these people would continue to be located close by on the LBNL site, thus maintaining the same public services demand in the general area. With inclusion of appropriate LRDP EIR and project-specific mitigation, these impacts would be less than significant.

Under the reduced height alternative, public services impacts would be essentially the same as those expected under the proposed project. These include impacts on fire, police, and emergency services providers. Although there would be about 50 fewer people in the building than under the proposed project, these people would continue to be located close by on the LBNL site, thus maintaining the same public services demand in the general area. With inclusion of appropriate LRDP EIR and project-specific mitigation, these impacts would be less than significant.

TRANSPORTATION/TRAFFIC

Under the reduced footprint alternative, transportation and parking impacts would be essentially the same as those expected under the proposed project. With a smaller footprint, however, there would be about 20 percent fewer truck trips to haul excavated soil and thus there would be a marginal reduction of temporary construction impacts than under the proposed project.

Otherwise, while there would be about 50 fewer people in the building than under the proposed project, these people would continue to be located close by on the LBNL site, thus maintaining the traffic patterns and parking demand in the general area. With inclusion of appropriate LRDP EIR and project-specific mitigation, these impacts would be less than significant.

Under the reduced height alternative, transportation and parking impacts would be essentially the same as those expected under the proposed project. While there would be about 50 fewer people in the building than under the proposed project, these people would continue to be located close by on the LBNL site, thus maintaining the traffic patterns and parking demand in the general area. With inclusion of appropriate LRDP EIR and project-specific mitigation, these impacts would be less than significant.

UTILITIES, SERVICE SYSTEMS, AND ENERGY

Under the reduced footprint alternative, utilities impacts would be essentially the same as those expected under the proposed project. These include impacts on water, wastewater, power, telecommunications, and solid waste collection and disposal providers. Although there would be about 50 fewer people in the building than under the proposed project, these people would continue to be located close by on the LBNL site, thus maintaining the same utilities and energy services demand in the general area. Slight reductions as compared with the project can be expected from a smaller building due to reductions in building-specific utilities, including power for climate control and lighting, and water for landscape irrigation. With inclusion of appropriate LRDP EIR and project-specific mitigation, these impacts would be less than significant.

Under the reduced height alternative, utilities impacts would be essentially the same as those expected under the proposed project. These include impacts on water, wastewater, power, telecommunications, and solid waste collection and disposal providers. Although there would be about 50 fewer people in the building than under the proposed project, these people would continue to be located close by on the LBNL site, thus maintaining the same utilities and energy services demand in the general area. Slight reductions as compared with the project can be expected from a smaller building due to reductions in building-specific utilities, including power for climate control and lighting, and water for landscape irrigation. With inclusion of appropriate LRDP EIR and project-specific mitigation, these impacts would be less than significant.

**TABLE V-1
SUMMARY OF PROJECT ALTERNATIVES**

PROJECT DESCRIPTION		Proposed Project	No Project	Grizzly Peak Off-site Soil Disposal	Building 90 Complex Trailer Site	Reduced Footprint	Reduced Building Height
Location (Building)		Western LBNL near B50 Complex	n.a.	Western LBNL near B50 Complex	Northwestern LBNL near Building 90	Western LBNL near B50 Complex	Western LBNL near B50 Complex
Size (approx) building / footprint		65,000 gsf 15,000 sf	n.a.	65,000 gsf 15,000 sf	65,000 gsf 15,000 sf	52,000 gsf 12,000 sf	52,000 gsf 15,000 sf
Number of Occupants		240	n.a.	240	240	190	190
Amount of excavated soil / number of truck trips		26,000 yd ³ 2,170 round trips	0 n.a.	26,000 yd ³ 2,170 round trips	10,000 yd ³ 833 round trips	21,000 yd ³ 1,730 round trips	26,000 yd ³ 2,170 round trips
Number of New Staff / Traffic Trips		0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0

TABLE V-1 (Continued)
SUMMARY OF PROJECT ALTERNATIVES

	Proposed Project	No Project	Grizzly Peak Off-site Soil Disposal	Building 90 Complex Trailer Site	Reduced Footprint	Reduced Building Height
PROJECT IMPACTS						
Aesthetics	Project would remove some trees and would be partially visible off-site against backdrop of B50 Complex.	No Impact	Similar to project. Increased truck presence on Grizzly Peak / Centennial Drive roadways.	Similar to project. Project would remove fewer trees and would be partially visible off-site, but without visual context of built environment.	Slightly less than project. Fewer trees might be removed, and building would be slightly less apparent from off-site due to narrower building profile.	Less than project. Shorter building would be less visible from off-site. Same number of trees removed.
Air Quality	Construction impacts include approx. 2,200 truck trips, plus other construction equipment operation. No net new operational trips.	No Impact.	Same as project. Truck route for soil disposal would be different but with similar air emissions effects.	Less than project. Construction impacts include approx. 830 truck trips, plus other construction equipment operation. No net new operational impacts.	Less than project. Construction impacts include approx. 1,730 truck trips, plus other construction equipment operation. No net new operational impacts.	Slightly less than project. Same soil hauling impact. Smaller building would marginally reduce time of operation of construction equipment.
Biological Resources	Project would remove approximately 20 eucalyptus and one bay tree. Site disturbance has very small chance of disturbing special status species (not known to be present on site).	No Impact.	Same as project.	Less than project. Would require removal of up to 12 pine trees and 6 Australian willow trees. No known chance of disturbing special status species.	Less than project. Would likely remove fewer than 20 eucalyptus trees. Would slightly reduce very small chance of disturbing special status species.	Same as project.

TABLE V-1 (Continued)
SUMMARY OF PROJECT ALTERNATIVES

	Proposed Project	No Project	Grizzly Peak Off-site Soil Disposal	Building 90 Complex Trailer Site	Reduced Footprint	Reduced Building Height
PROJECT IMPACTS (cont.)						
Cultural Resources	Project site disturbance has very small chance of disturbing cultural resources (not known to be present on site).	No Impact.	Same as project.	Similar to the project. Project site disturbance has very small chance of disturbing cultural resources. Site has not been excavated, although it has been previously disturbed.	Slightly less than project. With smaller building footprint, probability of disturbing subsurface cultural resources is slightly reduced.	Same as project.
Geology and Soils	Project would place building on sloped site in Alquist Priolo Zone.	Retaining employees in older existing buildings subjects them to working in structures built to less stringent seismic standards.	Same as project.	Less than project. Site is flat and excavation would be limited to foundation and basement placement.	Less than project. Marginally smaller excavation and slope stabilization would be necessary.	Same as project.
Hazards and Hazardous Materials	Although the potential for such impacts exists, no wildfire or hazardous materials impacts are anticipated.	Many staff would continue to work in overcrowded conditions.	Same as project.	Same as project.	Same as project.	Same as project.
Hydrology and Water Quality	The project would add approx. 15,000 sf of impervious surface to project site.	No Impact.	Same as project.	Less than project. The project would reduce small amount of pervious landscape areas on currently developed site.	Less than project. Would add approx. 12,000 sf of impervious surface to project site.	Same as project.

TABLE V-1 (Continued)
SUMMARY OF PROJECT ALTERNATIVES

	Proposed Project	No Project	Grizzly Peak Off-site Soil Disposal	Building 90 Complex Trailer Site	Reduced Footprint	Reduced Building Height
PROJECT IMPACTS (cont.)						
Land Use and Planning	Project would change immediate land use but be consistent with surrounding land use; temporary construction land use impacts.	No Impact.	Same as project.	Potential land use conflict if building is too close to existing Building 90 or if it precludes future development of buildings near this site. Would also eliminate 50 parking spaces while increasing parking demand in area.	Same as project.	Same as project.
Noise	Project would create temporary construction noise impacts that could be noticeable from nearby off-site receptors. Trucks carrying soil would create noises along routes.	No Impact.	Similar to project. Trucking noise would be experienced along a different route.	Greater than project. Off-site residences are closer to this site than are residences to the proposed project site. Duration of construction and construction noise, however, would be marginally less.	Less than project. Duration of construction and construction noise would be marginally less.	Less than project. Duration of construction and construction noise would be marginally less.
Public Services	Because the project would create a new building but not add new people to LBNL site, impacts on police, fire, and emergency medical services would be negligible.	No Impact.	Same as project.	Same as project.	Same as project.	Same as project.

TABLE V-1 (Continued)
SUMMARY OF PROJECT ALTERNATIVES

	Proposed Project	No Project	Grizzly Peak Off-site Soil Disposal	Building 90 Complex Trailer Site	Reduced Footprint	Reduced Building Height
PROJECT IMPACTS (cont.)						
Transportation and Traffic	Project construction includes construction vehicles and approx. 2,170 round truck trips through City of Berkeley to remove excavated soil.	No Impact.	Similar to project. Would require approx. 2,170 round truck trips through Grizzly Peak corridor to remove excavated soil.	Less than project. Would require approx. 833 round truck trips through City of Berkeley to remove excavated soil.	Less than project. Would require approx. 1,730 round truck trips through City of Berkeley to remove excavated soil.	Same as project.
Utilities	Project would marginally increase demand on utilities service providers due to building specific utility demands (power for building climate control, lighting, and landscape irrigation). However, increases would be minimal as project would not increase site population.	No Impact.	Same as project.	Same as project.	Slightly reduced from project. Marginal decrease in building-specific demands (power for building climate control and lighting and landscape irrigation) due to smaller building size.	Slightly reduced from project. Marginal decrease in building-specific demands (power for building climate control and lighting and landscape irrigation) due to smaller building size.

NOTES: “gsf” is “gross square feet.”
“sf” is “square feet”

CHAPTER VI

CEQA CONSIDERATIONS

INTRODUCTION

This section summarizes the findings with respect to significant, unavoidable environmental impacts; growth-inducing impacts; and cumulative impacts of the proposed project.

A. SIGNIFICANT, UNAVOIDABLE EFFECTS

Mitigation measures have been identified for all significant impacts identified in the EIR. Therefore, no impacts were determined to be significant and unavoidable.

B. GROWTH INDUCEMENT

Projects are typically considered growth-inducing if they foster economic or population growth. Typical growth inducers might be the extension of urban services or transportation infrastructure to previously un-served or under-served areas, or the removal of major barriers to development.

The project would not result in any employment growth at LBNL, nor would it foster an increase in population in the project vicinity. The project would not provide major new infrastructure that could serve to induce additional growth, either at LBNL or in the area. Rather, the project would provide some relief from existing overcrowded conditions in other LBNL facilities. The project would be implemented within the existing LBNL grounds, in an area connected to all necessary urban services. No new roadways would be constructed. The project would be consistent with the existing LBNL Long-Range Development Plan.

In light of the above, the project would not have the capacity to induce growth to any meaningful degree.

C. CUMULATIVE IMPACTS

The California Environmental Quality Act (CEQA) defines cumulative impacts as two or more individual effects which, when considered together, are substantial or which compound or increase other environmental impacts. The cumulative analysis is intended to describe the “incremental impact of the project when added to other, closely related past, present, or reasonably foreseeable probable future projects” which can result from “individually minor but collectively significant projects taking place over a period of time (state CEQA *Guidelines* Section 15355).

Cumulative impacts that may occur as a result of the project are discussed in the appropriate sections of Chapter IV of this report. In summary, the project would not be expected to contribute considerably to cumulative effects as the proposed project would decompress currently overcrowded conditions in the nearby Building 50 and 70 complexes. As such, no new persons, traffic trips, and/or demands for utility service systems and public services are anticipated. Refer to Sections IV.A through IV.L, Cumulative Impacts subsections, for a complete discussion of cumulative effects.

The proposed project has been compared to the projected development in the area for analysis of cumulative impacts. Planned, pending, and/or reasonably foreseeable projects in the area of the proposed project include:

- A foreseeable proposal to design and implement a new Long Range Development Plan (LRDP) for LBNL; this LRDP would guide LBNL's development for approximately 22 years. The proposed new LRDP is anticipated to identify new population and space growth projections for LBNL, although growth would be projected to occur at approximately the same rate as has been experienced at LBNL during its recent history (approximately 1.3 percent per year). Because there is still capacity for growth in space and population in the current LRDP, the main differences between the current LRDP and the upcoming proposed new LRDP would be realized during the middle and later phases of the planning period, sometime after 2008. Should this proposal move forward, an environmental analysis of and decision regarding this project is expected to occur in late 2004.
- In Spring 2003, approval was given for LBNL to construct the Molecular Foundry building in the southeastern area of Berkeley Lab. This six-story, approximately 94,500 gsf laboratory building will be constructed between early 2004 and early 2006. It will be a cut-fill construction, meaning that no excavation soil would need to be hauled in to or out of the project site. The building would hold 137 Lab staff, visiting scientists, and graduate students.
- Development in the surrounding area includes growth and development within the City of Berkeley as envisioned in the 2001 Berkeley General Plan and EIR. The 2001 City of Berkeley General Plan allows for steady growth and development, but, given a lack of substantial undeveloped space in the City, at a relatively even pace with an emphasis on infill development. Projections include a population increase of approximately 7,000 people (a roughly six percent increase), approximately 3,300 new household units (a roughly eight percent increase), and approximately 3,700 new jobs (a roughly five percent increase) by the year 2020.

A nearby specific project, the demolition of the State Department of Public Health building, is scheduled to begin soon at Hearst and Shattuck Avenues in the City of Berkeley. This nine-story building contains an estimated 150,000+ gsf. Demolition would take place through the year 2004. There are currently no reasonably foreseeable plans to redevelop this site.

- Growth and development at the neighboring UC Berkeley campus includes the program currently under construction under the *Northeast Quadrant Science and Safety Projects and 1990 Long Range Development Plan*, January 2002 ("NEQSS" Project). Also, future development and growth is anticipated as part of the forthcoming UC Berkeley Long Range

Development Plan and EIR. The NEQSS project would construct approximately 324,400 gsf of buildings (demolition of existing 100,000 gsf, construction of 430,000 gsf) 140 parking spaces and approximately 400 full-time equivalent (FTE) employees to the northeastern quadrant of the UC Berkeley campus after a construction period—currently underway—projected to last from approximately 2002 to 2005. Excavation and soil hauling will end during late summer 2003 and thus would not coincide with proposed project soil transport. The forthcoming UC Berkeley LRDP and EIR project population increases of up to 12 percent (approximately 5,320 “heads”) and in built space by up to 18 percent (approximately 2.2 million gsf) by the year 2020. A Notice of Preparation to prepare an LRDP EIR was issued in August 2003 and the draft LRDP and EIR are expected to be circulated in Spring of 2004. Population growth under the UC Berkeley NEQSS project and the forthcoming LRDP are scheduled to gradually begin to take effect after 2005, as UC Berkeley has agreed with the City of Berkeley that it will not begin to substantially increase its population prior to that time.

CHAPTER VII

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CHAPTER IX

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³⁹ Building 49 was originally designated Building 50X.

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CHAPTER X

GLOSSARY

ABAG	Association of Bay Area Governments
ADA	Americans with Disabilities Act
AMSL	Above Mean Sea Level
AOC	Area of Concern
A-P Zone	Aquist-Priolo Earthquake Zone
ARB	California Air Resources Board
BAAQMD	Bay Area Air Quality Management District
BMPs	Best Management Practices
CARB	California Air Resources Board
CBC	California Building Code
CDFG	California Department of Fish and Game
CDMG	California State Department of Conservation, Division of Mines and Geology
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CGS	California Department of Conservation, Geological Survey
CNDDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
dB	Decibels
dBA	A-weighted decibels
DOE	U.S. Department of Energy
EBMUD	East Bay Municipal Utility District

EH&S	Environment, Health, and Safety (Division)
EIR	Environmental Impact Report
EPA	U.S. Environmental Protection Agency
ESA	Environmental Science Associates
FEMA	Federal Emergency Management Agency
FY	Fiscal Year
gsf	Gross Square Feet
HVAC	Heating Ventilation Air Conditioning
Hz	Hertz
KV	Kilovolt
KVA	Kilovolt (Annual)
LEED	Leadership in Energy & Environmental Design
Leq	Energy-Equivalent Noise Level
LBL/LBNL	Lawrence Berkeley Laboratory/Lawrence Berkeley National Laboratory
LOS	Level of Service
LRDP	Long Range Development Plan
LTS	Less than significant
NEPA	National Environmental Policy Act
NEQSS	Northeast Quadrant Science and Safety Projects
NPDES	National Pollutant Discharge Elimination System
NO _x	Nitrogen oxide
NPDES	National Pollutant Discharge Elimination System
OSHA	Occupational Health and Safety Administration
PM-10	Particulate Matter – 10 microns or smaller
ROG	Reactive Organic Gas
RWQCB	Regional Water Quality Control Board

SEIR	Supplemental Environmental Impact Report
sf	Square feet
SHMA	Seismic Hazards Mapping Act
SIP	State Implementation Plan
SWMU	Solid Waste Management Unit
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TMDL	Total Maximum Daily Load
UBC	Uniform Building Code
UC	University of California
UCB	University of California at Berkeley
UCOP	University of California, Office of the President
UCPD	UC Berkeley Police Department
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VOC	Volatile organic compound

CHAPTER XI

APPENDICES

APPENDIX A

REVISED (AUGUST 2003) NOTICE OF PREPARATION AND RESPONSES

APPENDIX B

ORIGINAL (JUNE 2003) NOTICE OF PREPARATION AND RESPONSES